

IN THE CLAIMS

Please amend the claims to the following:

1. (Currently Amended) A method comprising:

receiving ~~from a processor~~ a plurality of partial data write transactions, each of the plurality of partial data write transactions including a write combinable attribute to indicate they are ~~which are identified by the processor as~~ write combinable partial data write transactions;

~~storing~~ combining partial data associated with the plurality of partial data write transactions in a buffer of an input/output (I/O) hub to form write combined data in response to each of the plurality of partial data write transactions including the write combinable attribute to indicate they are ~~being identified as~~ write combinable partial data write transactions; and

flushing the write combined data associated with the plurality of write transactions to an I/O device ~~according to a protocol between the I/O hub and the processor.~~

2. (Currently Amended) The method of claim 1, wherein flushing the data to the I/O device includes:

determining whether a flush signal has been received from ~~a~~ the processor; and

flushing the data if the flush signal has been received, the protocol including an signaling protocol.

3. (Currently Amended) The method of claim 2, further including sending a write completion signal to the processor for each of the plurality of partial data write transactions before the data is flushed to the I/O device, wherein each write completion signal is to verify[[ing]] buffering of a corresponding partial data write transaction of the plurality of partial data write transactions.

4. (Original) The method of claim 3, further including sending a flush completion signal to the processor after the data is flushed to the I/O device.

5. (Original) The method of claim 2, wherein flushing the data if the flush signal has been received further includes:

tagging the buffer with a first source identifier associated with one or more of the write transactions;

detecting a second source identifier associated with the flushing signal;

comparing the second source identifier to the first source identifier; and

flushing the data to the I/O device if the second source identifier matches the first source identifier.

6. (Original) The method of claim 5, further including repeating the comparing for a plurality of buffers, each buffer corresponding to an I/O port.

7. (Currently Amended) The method of claim 1, wherein flushing the data to the I/O device includes:

determining whether a latency condition exists; and

flushing the data according to a timing protocol in response to ~~if~~ the latency condition existing~~ing~~[[s]]~~the protocol including a timing protocol.~~

8. (Currently Amended) The method of claim 7, further including sending a write completion signal to ~~a the~~ processor for each of the partial data write transactions as the data is flushed to the I/O device, each write completion signal verifying flushing of a corresponding write transaction of the plurality of partial data write transactions.

9. (Original) The method of claim 7, wherein the latency condition includes a delay in receiving a next combinable write transaction from the processor and an interface to the I/O device being in an idle state.

10. (Original) The method of claim 1, wherein flushing the data to the I/O device includes flushing more than one cache line worth of data to the I/O device.

11. (Original) The method of claim 1, wherein the receiving includes receiving a plurality of commands instructing the I/O hub to consider each write transaction for write combining, each of the plurality of write transactions including one of the plurality of commands.

12. (Currently Amended) An input/output (I/O) hub comprising:

receiving logic to receive a first write transaction and a second write transaction from a

processor, the first and the second write transactions to reference partial data of a

cache line within the processor, wherein the first and second write transactions

include a write combinable attribute to indicate the processor is to identify the first

and the second partial write transactions as write combinable,

~~storage~~ combining logic coupled to the receiving logic to combine ~~store~~ the partial data of

the cache line referenced by the first and second write transactions as write

combined data in response to the first and second write transactions including the

write combinable attribute to indicate they are being identified ~~as~~ write combinable;

and

flushing logic coupled to the ~~storage~~ combining logic to flush the write combined data to an

I/O device in response to a protocol event.

13. (Previously Amended) The I/O hub of claim 12, wherein the protocol event includes special flush signal to be received by the receiving logic from the processor.

14. (Previously Amended) The I/O hub of claim 13, further comprising transmission logic to send a first and a second write completion signal to the processor for the first and the second write transactions, respectively, before the write combined data is flushed to the I/O device, wherein the first and the second write completion signals are to verify successful storage of the partial data referenced by the first and the second write transactions, respectively.

15. (Previously Amended) The I/O hub of claim 14, wherein the transmission logic is also to send a flush completion signal to the processor after the write combined data is flushed to the I/O device.

16. (Currently Amended) The I/O hub of claim 12, further comprising latency ~~write combining~~ logic coupled to the combining logic to determine whether a latency condition exists, wherein the protocol event includes the latency condition.

17. (Previously Amended) The I/O hub of claim 16, further comprising transmission logic to send a first and a second write completion signal to the processor for the first and the second write transactions, respectively, as the write combined data is flushed to the I/O device, wherein the first and the second write completion signals are to verify flushing of the first and the second write transactions, respectively.

18. (Previously Amended) The I/O hub of claim 16, wherein the latency condition includes a delay in receiving a next third combinable write transaction from the processor and an interface to the I/O device being in an idle state.

19. (Currently Amended) The I/O hub of claim 12, wherein the combining ~~storage~~ logic includes a plurality of buffers, each buffer corresponding to an I/O port, and wherein the flushing logic is to flush data from one of the plurality of buffers corresponding to the processor in response to a protocol event associated with the processor.

20. (Cancelled).

21. (Currently Amended) A system comprising:

an input/output (I/O) device;

a processor to associate a write combinable attribute with ~~identify~~ a plurality of write transactions to identify them as write combinable and to transmit the plurality of write transactions, wherein each of the write transactions are to be associated with partial data; and

an I/O hub coupled to the I/O device s and the processor, the I/O hub having a write combining module to receive the plurality of write transactions from the processor, to combine ~~store~~ the partial data associated with the plurality of write transactions to form a write combined data set in response to the plurality of write transactions being associated with the write combinable attribute to identify them ~~being identified~~ as write combinable, and to transmit ~~flush~~ the write combined data set to the I/O device in response to a protocol event associated with the processor, ~~the write combined data set to be longer than one cache line.~~

22. (Previously Amended) The system of claim 21, wherein the protocol event includes a flush signal from the processor.

23. (Currently Amended) The system of claim 22, wherein the processor is to generate the flush signal in response to a flushing event occurring[[ed]] and a write combine history indicating[[es]] that one or more combinable write transactions have been issued by the processor.

24. (Original) The system of claim 23, wherein the write combine history is to track combinable write transactions for a particular processor thread.

25. (Original) The system of claim 24, wherein the write combine history is to further track combinable write transactions for a particular I/O hub.

26. (Previously Amended) The system of claim 22, wherein the I/O hub is included in a chipset that includes a plurality of I/O hubs, the processor to send the flush signal to each of the plurality of I/O hubs.

27. (Previously Amended) The system of claim 26, wherein the processor is to verify that one or more combinable write transactions have been sent to each of the plurality of I/O hubs before sending the flush signal.

28. (Previously Amended) The system of claim 21, wherein the protocol event includes a latency condition.

29. (Original) The system of claim 21, wherein the processor is to instruct the I/O hub to consider each write transaction for write combining based on a page table attribute associated with the write transactions.

30. (Original) The system of claim 21, further including a point-to-point network interconnect coupled to the processor and the I/O hub, the network interconnect having a layered communication protocol.

31. (Previously Amended) A method comprising:

receiving a plurality of write transactions from a processor, the plurality of write transactions being identified as write combinable transactions and being destined for an input/output (I/O) device;

storing data associated with the plurality of write transactions to a buffer of the I/O hub in response to the plurality of write transactions being identified as write combinable transactions;

determining whether a latency condition exists, the latency condition including a delay in receiving a next combinable write transaction from the processor and an interface to the I/O device being in an idle state;

flushing the data to the I/O device if the latency condition exists; and

sending a write completion signal to the processor for each of the plurality of write transactions as the data is flushed to the I/O device, each write completion signal verifying flushing of a corresponding write transaction.

32. (Original) The method of claim 31, wherein flushing the data to the I/O device includes flushing more than one cache line worth of data to the I/O device.

33. (Original) The method of claim 31, wherein the receiving includes receiving a plurality of commands instructing the I/O hub to consider each write transaction for write combining, each of the plurality of write transactions including one of the plurality of commands.

34. (Currently Amended) An apparatus ~~processor~~ comprising:

page table logic to identify a page in a memory; wherein the page table logic is to associate

a write combining attribute with the page in the memory to indicate that partial

writes from the page are combinable;

write combining logic to combine a plurality of partial writes from the page into a combined

write in response to the write combining attribute associated with the write

combining attribute to indicate that partial writes from the page are combinable; and

transmit logic to transmit the combined write to an external device.

35. (Currently Amended) The apparatus ~~processor~~ of claim 34, wherein the plurality of partial writes include partial writes of a cache line, and wherein the combined write includes a full cache line.

36. (Currently Amended) The apparatus ~~processor~~ of claim 34, wherein the external device includes an input/output (I/O) device to be coupled to the apparatus ~~processor~~ utilizing a point-to-point interconnect.